

NETWORKS

FAQ

Q What is Wi-Fi Protected Setup (WPS)?

A WPS is a new standard from the WiFi Alliance. It is designed to make adding devices to a network easier by automatically transferring network settings.

There are several ways this can be achieved. The PIN method requires taking a device's identification number and entering it on the access point. This method has to be supported by all WPS devices. For a PC, though, this method isn't any easier than using Windows' Wireless Zero Configuration wizard and typing in the network password.

The Push-button method works in a similar way to Buffalo's AOSS, in that a configuration button needs to be pressed on the access point and on the device. The final method uses near-field communication when the device is placed close to the access point. These two methods should make adding non-PC devices, such as wireless media receivers, to a network much easier.

David Ludlow
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EDIMAX BR-6504N

★★★★

£80 inc VAT

EXCLUSIVE

Edimax's BR-6504N is the first broadband router we've seen to use draft 2 of the 802.11n standard. This is a minor update, but it should offer better stability and integration with other wireless devices.

The iPod-white casing of the router is attractive. It ships with a stand so you can mount the router vertically rather than horizontally. However, with the router standing vertically, the cables get in the way of the antennas, so they're difficult to adjust.

Configuration is through the same web-based interface we've seen on other Edimax products. While not terrible, it lacks the finesse and ease of use of other manufacturers' CD-based setup wizards. The BR-6504N has a quick-setup wizard, but this only helps you configure the broadband and IP address settings and doesn't help you configure wireless. To turn on security, pick your own network name and choose a wireless channel, you have to adjust the settings manually. Setting a client up should be easier, as the BR-6504N uses Wi-Fi Protected Setup (WPS) to transmit configuration settings to a client automatically. Edimax's wireless client, which is installed with all its network adaptors, supports WPS, but in practice it's no easier than simply selecting a network and typing in the password. The technology could make it easier to join other devices, though (see FAQ, left).

Our performance testing started well with our Centrino notebook. The throughputs at near and far ranges were excellent, and we even managed to get a throughput of 5.35Mbit/s at 25m. This means that with this router you should be able to browse the internet from anywhere in your home.

SUMMARY

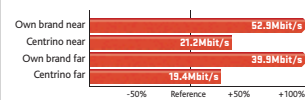
✓ Excellent 802.11g performance

✓ Good range

✗ Unreliable 802.11n performance

WIRELESS ROUTER Draft 2 802.11n (270Mbit/s), 4x 10/100 Ethernet ports, WAN port
PART CODE BR-6504N
SUPPLIER www.scan.co.uk
DETAILS www.edimax.com

PERFORMANCE (see page 58)



Sadly, things weren't quite as simple when we switched to an EW-7728n PCI network adaptor (£38). It worked brilliantly at near range, and our tests showed very high throughputs. Once we moved to far range, though, the signal became unreliable and we found it hard to receive an IP address, let alone transfer a file. Updating the router's firmware to the latest version helped a little, but in the end we had to change the advanced wireless settings and turn off the 40MHz mode, reverting to the standard 20MHz mode instead. This immediately made things better and our far range test worked well.

However, we couldn't get a reliable signal at 25m and the signal was dropped each time before we completed our throughput tests. Switching the wireless adaptor to 802.11g mode (54Mbit/s) saw the connection problems stop, so it's evidently the Draft-N part of the router that causes the trouble.

The BR-6504N isn't bad value, particularly if you want a quick 802.11g router, but Netgear's RangeMax Next Wireless Router (see 'Also consider...' below) is almost as quick and has more reliable Draft-N performance.

David Ludlow

Also consider...

BUFFALO Wireless G Broadband ADSL2+ Modem Router

★★★★★

£37 inc VAT

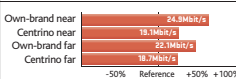


If all you're after is a way of sharing

your ADSL connection wirelessly, this router is amazing value. Its performance with our Centrino notebook was excellent and we got very good range from it. It's a little tricky to set up, however, as the web interface is quite messy.



WIRELESS ADSL ROUTER 802.11g (54Mbit/s), 4x 10/100 LAN ports, WAN port (ADSL2+ modem), UPnP PART CODE WBMR-G54 SUPPLIER www.lambda-tek.com DETAILS www.buffalo-technology.com ✓ Good all-round performance; cheap ✗ Fiddly setup FULL REVIEW Jun 2007



NETGEAR RangeMax Next Wireless Router

★★★★★

£89 inc VAT



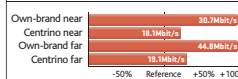
It might be a little fiddly to set up, but Netgear's RangeMax

Next Wireless Router provides excellent performance and range when used with its own adaptors. Centrino performance wasn't quite as good, but the range was still excellent.

Its price is very competitive, and there's an equally good ADSL version of the router, too.



WIRELESS ROUTER Draft 802.11n (270Mbit/s), 4x 10/100 LAN ports, WAN port, UPnP PART CODE WNR834B SUPPLIER www.lambda-tek.com DETAILS www.netgear.com ✓ Fast performance with own-brand adaptors ✗ Mediocre Centrino performance FULL REVIEW Jun 2007





BUFFALO AirStation Wireless-N Nfiniti WZR-AG300NH-1

★★★★★
£157 inc VAT

BEST WANTED Buffalo's AirStation Wireless-N Nfiniti WZR-AG300NH-1 wireless router promises to offer the best Draft-N performance as it uses both the 2.4GHz (802.11g) and 5GHz (802.11a) bands. The benefit of using the 5GHz band is that there's less interference, as fewer products use this bandwidth. The Nfiniti also has the largest antenna array that we've ever seen on a wireless router.

Configuration is dead easy, as Buffalo supplies its configuration wizard on a CD. It helps you configure internet settings, wireless settings and security settings for the separate 2.4GHz and 5GHz networks.

Performance results were good rather than outstanding from our Centrino notebook, although we managed to get a throughput of 3.34Mbit/s at 25m, so range is good.

Next, we installed the Wireless-N Nfiniti Dual Band Notebook Adaptor, which costs £66. At 2.4GHz, our scores of 46.6Mbit/s at near range and 39.34Mbit/s at far range were impressive, but 17.81Mbit/s at 25m was incredible. The 5GHz network was even quicker, as the graph below shows. The stunning 23.75Mbit/s at 25m makes the Nfiniti the fastest long-range router we've reviewed.

With a four-port Gigabit Ethernet switch, this router is incredibly fast for all networks. With no ADSL modem built in, it's expensive, though, and Netgear's RangeMax Next Wireless Router (see 'Also Consider...' below left) has similar close-range performance but costs almost £70 less. That said, if you're looking for the best wireless performance and range, the Nfiniti WZR-AG300NH-1 is the best we've seen by a long way.

David Ludlow

SUMMARY	
✓ Excellent range	
✓ Incredible performance	
✗ Expensive	
WIRELESS ROUTER Draft 802.11n (300Mbit/s), dual-channel, 4x 10/100/1,000 LAN ports, WAN port, UPnP PART CODE WZR-AG300NH01 SUPPLIER www.lambda-tek.com DETAILS www.buffalo-technology.com	
PERFORMANCE (see page 58)	
Own brand near	48.4Mbit/s
Centrino near	19.1Mbit/s
Own brand far	46.7Mbit/s
Centrino far	17.9Mbit/s



LINKSYS WAG325N Wireless-N ADSL Gateway

★★★★★
£81 inc VAT

BEST BUY Linksys's WAG325N is the ADSL version of the WPC300N-UK Broadband router, which struggled with reliability and performance in our Labs test (*Shopper*, June 2007). Fortunately, reliability and performance have been improved, as has the initial configuration.

The CD-based configuration wizard took us through internet, wireless and security settings in a matter of minutes. Advanced settings are managed through Linksys's clearly laid-out web-based management pages.

Performance was top-notch. Using our Centrino notebook we got excellent results at near and far ranges, but we also got an excellent throughput of 5.75Mbit/s at 25m. Switching to the Wireless-N Notebook Adaptor, which costs £57, produced even better results. The WPC300N-UK limped through these tests with the same PC Card network adaptor, but the WAG325N stormed through them. Its throughput at near range was the best we've seen from any wireless router, including Apple's Airport Extreme when paired with an Apple notebook. Speeds dropped off at far range, although at 25m we still got an excellent throughput of 7.54Mbit/s.

The only problem we had was that the Windows Vista PC Card drivers didn't work with Linksys's client application. This is the only way to connect at the maximum of 300Mbit/s when using WPA-PSK TKIP encryption. Switching to WPA2 (AES) fixed the problem, as this uses the adaptor's hardware.

However, this is a minor point and doesn't detract from what is a good-value, speedy router with good range for both Centrino and Draft-N clients.

David Ludlow

SUMMARY	
✓ Excellent range	
✓ Stunning near-range throughput	
✗ Problematic Vista drivers	
WIRELESS ADSL ROUTER Draft 802.11n (300Mbit/s), 4x 10/100 Ethernet ports, WAN port (ADSL2+ modem), UPnP PART CODE WAG325N SUPPLIER www.lambda-tek.com DETAILS www.uk.linksys.com	
PERFORMANCE (see page 58)	
Own brand near	66.3Mbit/s
Centrino near	22.1Mbit/s
Own brand far	30.9Mbit/s
Centrino far	20.5Mbit/s



TP-LINK TL-WR642G 108M Wireless Router

★★★★★
£29 inc VAT

BUDGET BUY TP-Link is a well-known manufacturer of wireless kit in China, but the TL-WR642G 108M Wireless Router is the first product that we've seen in the UK. It's a standard wireless router with no ADSL modem, and it has one of the most attractive prices for a wireless router that we've reviewed.

Configuration is performed through the router's web-based management page. There's a quick-start wizard to guide you through the basic configuration, but it doesn't prompt you to turn on security. We also ran into some problems with the wireless configuration, as turning on the 108Mbit/s mode forced the router to operate on channel 6. While the supplied TP-Link wireless adaptor worked with this setting, our Centrino notebook kept losing the signal. To get it to work we had to turn off the 108Mbit/s mode.

This didn't turn out to be a bad thing, as throughput was good when we tested with our Centrino notebook. There was quite a drop-off in performance at far range, but we were pleased to see that we still got a throughput of 6.45Mbit/s at 25m.

Switching to a matching TP-Link 108Mbit/s wireless adaptor (USB, PCI and PC Card adaptors are all available for around £12) got similar results, but a slightly faster throughput of 7.25Mbit/s at 25m.

The TL-WR642G has all the usual features you'd expect to find on a modern router, including port forwarding, UPnP and a firewall. It's a shame that we suffered problems with the 108Mbit/s mode, but the TL-WR642G proved itself to be a good router with excellent range. For this price it's a bargain if all you want to do is share an internet connection.

David Ludlow

SUMMARY	
✓ Good value	
✓ Excellent range	
✗ 108Mbit/s mode is unreliable	
WIRELESS ROUTER 802.11g (54Mbit/s), 4x 10/100 Ethernet port, 1x WAN port, UPnP PART CODE TL-WR642G SUPPLIER http://svp.co.uk DETAILS www.tp-link.com	
PERFORMANCE (see page 58)	
Own brand near	10.9Mbit/s
Centrino near	14.5Mbit/s
Own brand far	14.1Mbit/s
Centrino far	10.8Mbit/s